

What You Need to Know About Musculoskeletal Disorders (MSD)

Definition

Ergonomics is the science of fitting jobs to the capacities of people who work in them. The goal of an ergonomics program is to reduce work-related musculoskeletal disorders (MSD) developed by workers when a major part of their jobs involve reaching, bending, lifting heavy objects, using continuous force, working with vibrating equipment, and doing repetitive motions. A secondary benefit is increased quality and productivity because workers are able to work smarter not harder.

Signs/Symptoms

Workers suffering from MSDs may experience less strength for gripping, less range of motion, loss of muscle function, and inability to do everyday tasks. Common symptoms include:

Painful joints

Pain, tingling, or numbness in hands or feet	Pain in wrists, shoulders, forearms, knees
Shooting or stabbing pains in arms or legs	Fingers or toes turning white
Swelling or inflammation	Back or neck pain
Burning sensation	Stiffness

These symptoms are not the same symptoms you feel upon adjusting to a new type of motion or in response to a sudden trauma (i.e., being struck by an object which may involve pain that is acute and temporary). MSDs occur over a period of time where the tearing down of tissue exceeds the body's ability to repair itself. These same symptoms may also occur in response to pregnancy, systemic diseases, hormonal changes in the body, heart disease, arthritis, and obesity. For this reason, it is important to seek medical care as soon as possible. Only your healthcare provider can provide an appropriate diagnosis and treatment plan. Contact ESH-2 at 7-7890 for assistance. You will find "What happens when I report to ESH-2" on the Ergonomics Web Page <http://www.esh.lanl.gov/~ergonomics/>

If you have signs or symptoms of MSDs....

If MSD signs and symptoms are not reported early, permanent disability may result. It is important that you report MSD signs and symptoms right away to avoid long-lasting problems. Your employer is required to respond promptly to those reports. Contact ESH-2 to report MSDs, MSD signs or symptoms, or MSD hazards.

Occupational Medicine (ESH-2)	667-7890
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What causes MSDS?

Work related MSDs may be caused by exposure to a combination of the following risk factors:

Repetition: Doing the same motions over and over again places stress on the muscles and tendons. The severity of risk depends on how often the action is repeated, the speed of the movement, the number of muscles involved, and the required force.

Forceful Exertions: Force is the amount of physical effort required to perform a task (such as heavy lifting) or to maintain control of equipment or tools. The amount of force depends on the type of grip, the weight of an object, body posture, the type of activity, and the duration of the task.

Awkward Postures: Posture is the position your body is in and affects muscle groups that are involved in physical activity. Awkward postures include repeated or prolonged reaching, twisting, bending, kneeling, squatting, working overhead with your hands or arms, holding fixed positions, or reaching beyond a safe "reach envelope."

Contact Stress: Pressing the body against a hard or sharp edge can result in placing too much pressure on nerves, tendons, and blood vessels. For example, using the palm of your hands as a hammer or leaning on your elbow on a hard surface while talking on the phone.

Vibration: Operating vibrating tools such as sanders, grinders, chippers, routers, drills, and saws can lead to nerve damage. This exposure is increased when combined with cold temperatures from the tool exhaust or environmental conditions.

Poor work organization: Poor work organization results in decreased rest breaks as well as increased stress due to internal and external pressures. Work organization can be improved by enlarging the number of different tasks performed, alternating difficult tasks with easier ones, appropriate staffing, matching job demands with worker abilities, optimizing human machine interfaces, and understanding the demand/control relationship in the work environment.

Talk to your supervisor or other responsible persons about your suggestions on how to fix the problem.

Contact your ESH representative or E-mail ergonomics@lanl.gov if you have questions about ergonomics design. *

*Before e-mailing ergonomics@lanl.gov please check out the ergonomics web page at: <http://www.esh.lanl.gov/~ergonomics/> to see if the answers to your questions are there.